

REMARKS

Claims 10 and 12 are pending in this application. By this Amendment, claims 1-9 and 11 are canceled without prejudice to, or disclaimer of, the subject matter disclosed therein.

Reconsideration of the application is respectfully requested.

Entry of the amendments is proper under 37 CFR §1.116 since the amendments: (a) place the application in condition for allowance for the reasons discussed herein; (b) do not raise any new issue requiring further search and/or consideration as the amendments amplify issues previously discussed throughout prosecution; and (c) place the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented because they are made in response to arguments raised in the final rejection. Entry of the amendments is thus respectfully requested.

The Office Action rejects claims 1, 2, 4-6 and 10-12 under 35 U.S.C. §102(e) over O'Keefe et al. (U.S. Patent Application Publication No. 2003/0098488); and claims 1-10 under 35 U.S.C. §103(a) over O'Keefe in view of Watanabe et al. (U.S. Patent Application Publication No. 2002/0024099). The rejections are respectfully traversed.

The cancellation of claims 1-9 and 11 renders their rejection moot. Moreover, none of the applied references, alone or in combination, disclose or suggest an electronic apparatus that includes an active electronic device and a driver circuit for causing a third electrode of the electronic device to output electromagnetic waves and varying a frequency of the electromagnetic waves to control a conductance of a carbon nanotube, wherein the frequency includes at least a predetermined frequency so that the conductance of the carbon nanotube is increased, as recited in independent claim 10.

O'Keefe teaches a method to electronically modulate the energy gap and band structure of semiconducting carbon nanotubes (Abstract).

Watanabe teaches a transistor of nanometer size that is capable of high speed operation and operates at room temperatures by using carbon nanotubes for semiconductor devices (Abstract).

Accordingly, O'Keefe does not include a driver circuit for varying a frequency of electromagnetic waves to control a conductance of the carbon nanotube, as recited in independent claim 10. O'Keefe merely controls a voltage to change a band gap of a carbon nanotube that functions as a semiconductor, and to thereby control an amount of current flowing into the carbon nanotube. However, O'Keefe is silent as to the specific change in conductance of the carbon nanotube. Accordingly, O'Keefe does not disclose or suggest varying a frequency of the electromagnetic waves to control a conductance of the carbon nanotube, as recited in independent claim 10. Accordingly, O'Keefe fails to disclose or suggest the features of independent claim 10.

Moreover, the Patent Office appears to imply that the changing gate voltages in O'Keefe produces a high frequency electromagnetic wave. However, O'Keefe does not disclose or suggest the production of a high frequency electromagnetic wave.

With respect to claim 12, the Patent Office alleges that claim 12 should be rejected because the small size and structure of the O'Keefe nanotube FET should allow GHz switching (Office Action, page 2, lines 19-21), and further points to paragraphs [0009] - [0011] of Watanabe (Office Action, page 3, lines 3-5). However, it appears that the Patent Office is assuming that frequency and operation speed are identical. However, operation speed and frequency are not identical. The GHz and THz switching described in paragraphs [0009] - [0011] of Watanabe do not indicate that the frequency is high, but merely that the operation speed is fast, as indicated in Watanabe's description in lines 1-2 of paragraph [0009] where "a switching speed of several tens of GHz" and the teaching that "switching devices of the carbon nanotubes having an operation speed of several THz" in lines 13-15 of

paragraph [0011]. Accordingly, neither Watanabe nor O'Keefe disclose or suggest the high frequency claimed in claim 12. As such, claim 12 is also patentable over a combination of the applied references.

For at least these reasons, claims 10 and 12 are patentable over the applied references. As such, withdrawal of the rejections of the claims under 35 U.S.C. §102(e) and 35 U.S.C. §103(a) is respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 10 and 12 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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